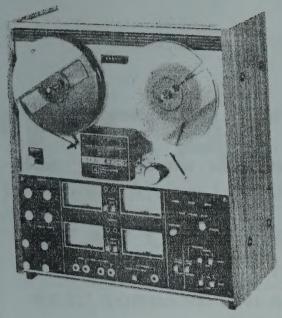
OWNER'S MANUAL



TEAC®

A-2340

4-channel SIMUL-Sync Stereo Tape Deck

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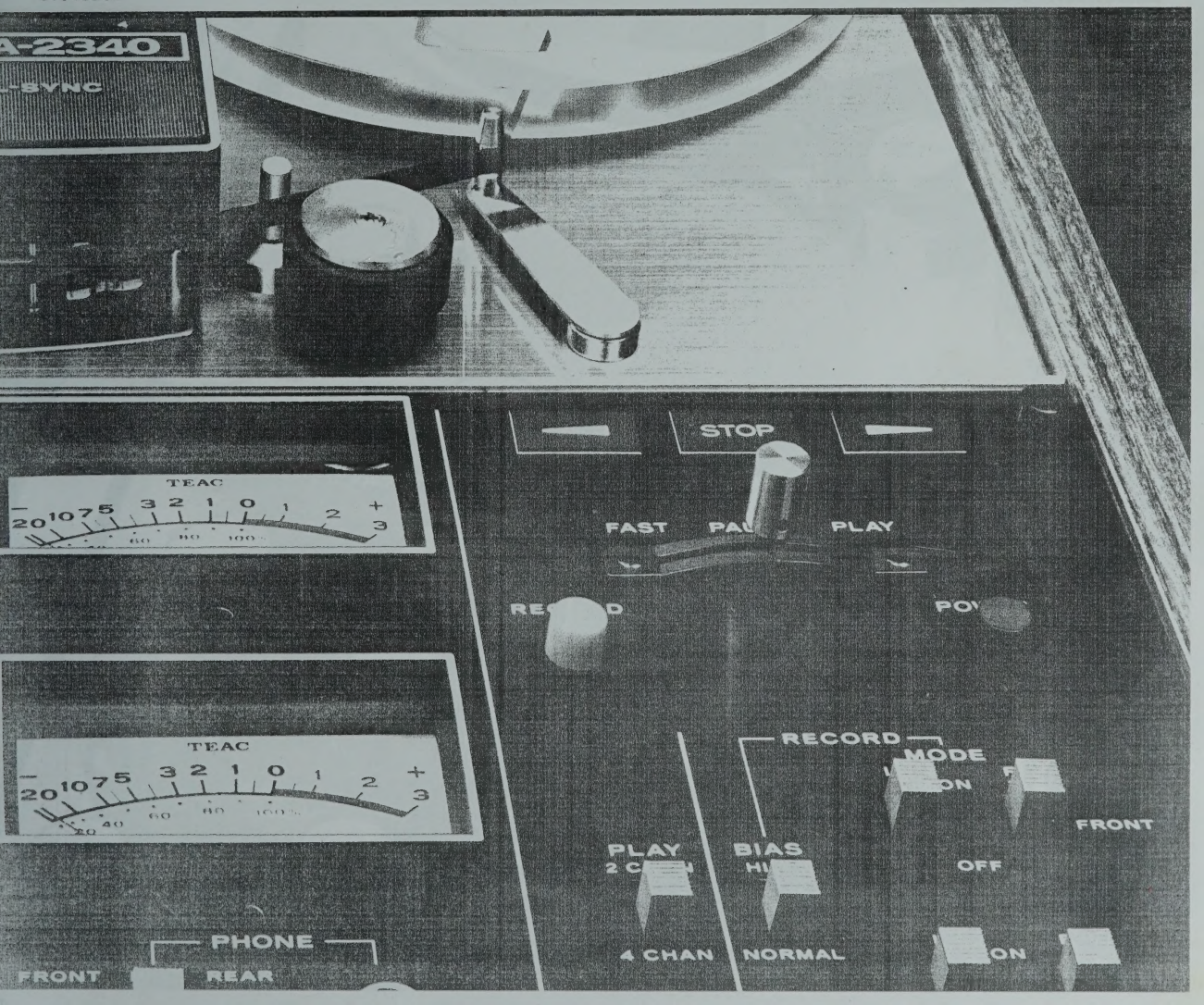

A-2340 4-channel SIMUL-Sync Stereo Tape Deck

TEAC®

The leader. Always has been.

TEAC CORPORATION	3-7-3 NAKA-CHO, MUSASHINO, TOKYO	PHONE: (0422) 53-1111
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PRINTED IN JAPAN 1175U1-D-2220E

The A-2340 is the result of a lot of careful thought and effort that TEAC put into the design of this superb 4-track 4-channel Stereo Tape Deck. This manual is also a part of TEAC's total commitment to supply you with the very best. Now you own one of the finest tape decks available in the world today. Close attention to the installation, operating, cleaning and maintenance procedures contained in this manual will greatly prolong the original performance of the machine and will contribute to your enjoyment of the best in your own quality sound.

Unpack the unit carefully and check the accessories supplied against the list. Retain the carton for possible future shipment. Should you find it necessary to return the unit for any reason, repack it in the original carton. Before connecting the unit to your home audio system, consult the instruction manual of your stereo amplifier for proper connection information.

Your new A-2340 has the following featured capabilities:

* 4-Channel Stereo recording/playback.
* 2-Channel Stereo recording/playback.
* Monophonic recording/playback.

WARRANTY

Please see the Warranty Card included with your deck.

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WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

SERVICE

Our investigation has shown that approximately 40% of the calls for service immediately after purchases resulted from improper operation of the equipment. Therefore, it is important that you thoroughly read and understand this manual before placing the unit in operation. Failure to properly clean your deck will result in degradation of performance. Careful observation of the cleaning and servicing hints contained in this manual will contribute to a lengthened, trouble-free unit life.

Should your tape deck need repair, contact the dealer where it was purchased or the nearest TEAC Authorized Service Center. They can also secure accessories for you. Your new TEAC A-2340 Tape Deck has been manufactured under the strictest quality control procedures. Each unit has been thoroughly checked at the factory. Should any damage have been incured during transit or should you have any doubts as to its performance, contact your dealer as soon as possible.

MOUNTING POSITION

This deck may be used in either the up-right or the horizontal position. The up-right position is preferred, however. For horizontal operation always attach the mounting spacers, furnished with the standard accessories, to protect the connections as well as to insure adequate ventilation.

FLUCTUATION OF THE SUPPLY VOLTAGE: should you be in an area where line voltage fluctuation is severe, the use of a voltage regulator may be advisable.

ENVIRONMENTAL CONDITIONS REQUIRED:

The TEAC A-2340 is well constructed, and adaptable to a wide range of environmental conditions. However, it is still an electronic device with limits to be considered. To prolong the life of your new deck, pay attention to the following factors when you install and operate the deck.

CONSTANT HIGH TEMPERATURE LOCATIONS:

Do not operate this unit near heating appliances, on top of an amplifier, or in direct sunlight. Temperature extremes will ultimately not only cause degradation of sound quality, but will also shorten the useful operating life of the unit. Avoid temperatures higher than 100° F (38° C).

EXTREME LOW TEMPERATURE: in such locations, lubricants will harden and satisfactory operation cannot be expected. Operation will be sluggish and an overload may be placed on the drive motor. Avoid temperatures lower than 40° F (5° C).

HIGH HUMIDITY LOCATIONS: will shorten equipment life due to corrosion and possible fungus growth on printed circuit boards.

DUSTY ENVIRONMENTS: your TEAC deck is a precision machine and as such should be protected from dust. Operation in a dusty atmosphere will result in excessive tape head wear. Your tapes should also be kept dust-free.

SPECIFICATIONS

Heads	Three, 4 track 4 channel and 2 channel, stereo or mono (with SIMUL-SYNC switch), erase, record and playback
Reel Size	7" and 5"
Tape Speed	7-1/2 ips and 3-3/4 ips (±0.5%)
Motors	1 dual speed hysteresis synchronous capstan motor 2 eddy current induction reel motors
Wow and Flutter	0.08% at 7-1/2 ips 0.10% at 3-3/4 ips
Frequency Response	30–22,000 Hz (±3 dB, 40–18,000 Hz) at 7-1/2 ips 30–16,000 Hz (±3 dB, 40–10,000 Hz) at 3-3/4 ips
Signal to Noise Ratio	55 dB
Harmonic Distortion	1% at 1,000 Hz normal operating level
Stereo Channel Separation	50 dB at 1,000 Hz
Fast Winding Time	90 seconds for 1,200 feet
Inputs	Line : 0.1 V, 50,000 ohms Microphone : 0.25 mV/–72 dB (600–10,000 ohms)
Outputs	Line : 0.3 V for load impedance of 10,000 ohms or more Headphones : 8 ohms
Power Requirements	117 V AC, 60 Hz, 140W
Dimensions	17-5/16"(W) x 18-3/4"(H) x 8-3/4"(D) [440(W) x 475(H) x 220(D)mm]
Weight	46-1/4 lbs, [21 kg] net
Standard Accessories	Empty reel, Input-output connection cord, Oil, Fuse, Cleaning stick applicator, Silicone cloth, Rubber feet, AC power cord, Splicing tape

* Specifications were determined using low noise tape.
* Features and specifications subject to change without notice.
* Photographs and/or illustrations may differ slightly from the appearance of your unit when production design improvements are incorporated.

System connection

The A-2340 is a discrete, 4-channel stereo tape deck. For full utilization of all four channels, it must be used with two separate 2-channel amplifiers, or (preferably) with one 4-channel stereo amplifier having separate, discrete inputs and outputs for each of the four channels. To maintain compatibility with standard, 2-channel stereo tapes, the channels are numbered to correspond with the tracks on the tape. They are further designated "front" and "rear" to identify them with normal microphone and speaker placement. Thus, channel #1 is FRONT, L-1; channel #2 is REAR, L-2; channel #3 is FRONT, R-3; and channel #4 is REAR, R-4. The LINE IN and OUTPUT jacks of the A-2340 should be connected to the corresponding designations on the panel of the 4-channel amplifier.

Important: If your 4-channel amplifier does not have a discrete output for 4-channel tape recorders with 4 separate jacks to correspond with the LINE IN jacks on the A-2340, discrete 4-channel recording and playback from the deck cannot be expected.

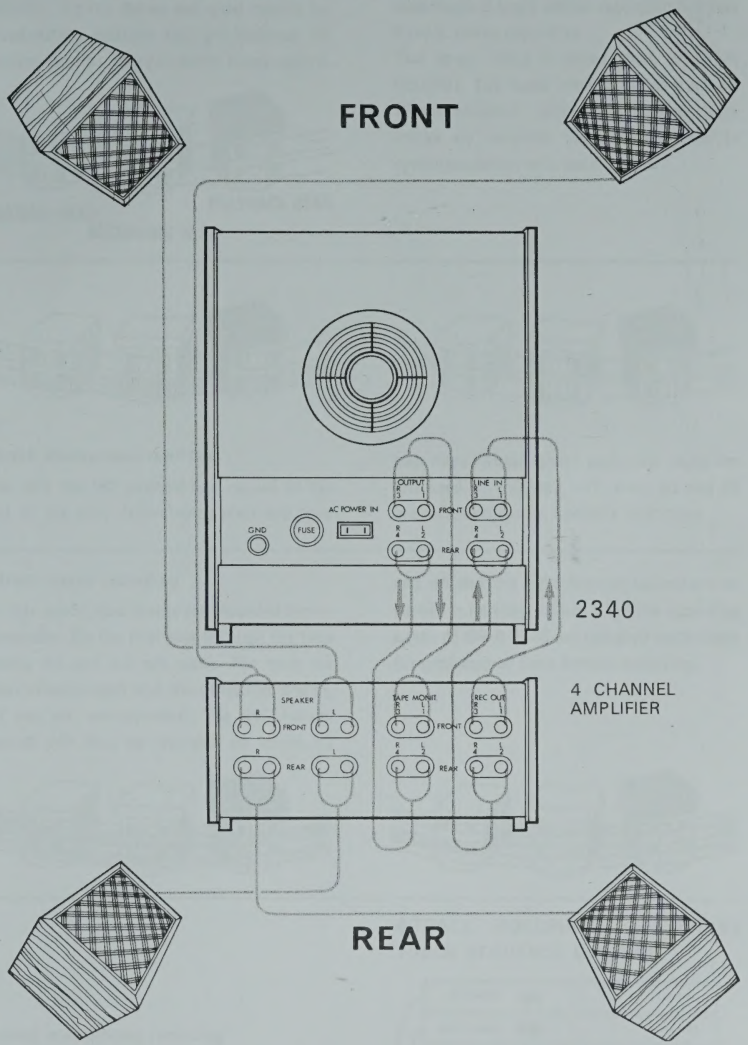
Before making connections

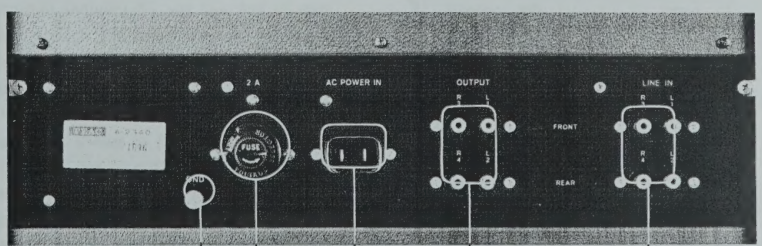
Set the POWER switch button to OFF.
Make sure the power line voltage and frequency to be used match those on the card attached to the deck. If they do not match, it is essential that you contact a TEAC Authorized Dealer or Service Station to have this deck adjusted to match the power line requirement where deck will be used.

Punch-in recording or "running splice"

(Instant PLAY-to-RECORD mode change)
During playback, if MODE select switches are in RECORD mode, you can instantly change to recording by depressing the RECORD button and (▷) button simultaneously. Tape travel will not be interrupted, thus avoiding the stop mode.
This method permits very smooth recording starts, avoiding tape bounce (and resultant problems), and is especially convenient for electronic editing. See page 8/9.

CONNECTIONS TO AND FROM THE A-2340





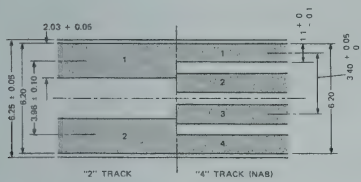
Ground terminal — **Fuse** 2A for 100 or 117V area, 1A for 220/240 area — **OUTPUT** terminals — **AC Power** line cord — **LINE IN** terminals R – right, L – left

Recording tape tracks & channels

Recording tape tracks and channels

A blank tape, of course, has no tracks on it. Until it is recorded, the tape could be used for any of the normal track configurations. The record head, record electronics and the procedure used in recording determine the track configuration. If the record head records the same signal on the entire width of the tape, the tape is called full (or single) track. If two different sections of the width of the tape are recorded separately it is called half (or two) track. If four sections are recorded separately, it is called quarter (or four) track.

In monophonic recording, each available track is recorded independently of the other tracks. In stereo recording, 2 tracks (2 channel stereo) or 4 tracks (4 channel stereo) are recorded simultaneously. To get the full information off the tape during playback, the playback head and electronics should be compatible with the recorded tape configuration.



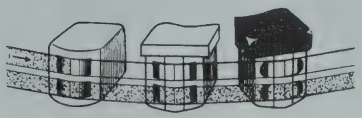
Playback compatibility

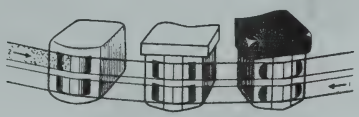
A four track stereo tape deck can replay both 4 track and 2 track tapes and from the standpoint of compatibility has the widest possible range of utilization. When playing a 2 track stereo tape on a four track machine, track #1 will be completely covered by the head. Track #2 will be slightly misaligned but stereo can still be enjoyed simply by compensating for the slight loss of track #2 volume with the controls. On the other hand, sounds recorded on a four track tape normally cannot be played on a two track tape deck, as both track #1 and #2 will be reproduced together resulting in mixed, unintelligible sound.

2-track stereo recording

Initially, 2-track stereo was used mainly by broadcasting stations and professional recording studios. More recently home recordists also switched to 2-track stereo for the advantages 2-track stereo recording has over 4-track stereo recording.

The upper track is called track #1 (Left channel). The lower track is called track #2 (Right channel). Using this method, both tracks are recorded simultaneously and in synchronization with each other.



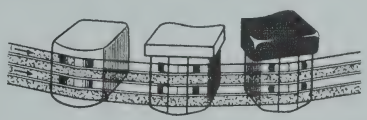


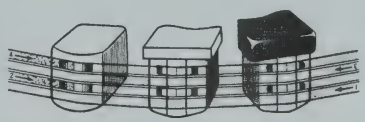
2-track monophonic recording

Use only the left channel and record to the end of the tape. Interchange reels and turn over tape. Then record again still using the left head. In this way, both track #1 and #2 are recorded, but in opposite directions.

4-track stereo recording

In this mode, two tracks are recorded simultaneously. On the first pass through the tape tracks #1 and #3 are used. The reels are then interchanged and the other two tracks, #2 and #4, are recorded. The left channel sounds will thus be recorded on tracks #1 and #4 and the right channel sounds are recorded on tracks #3 and #2. (The recording heads of the A-2340 are designed exclusively for professional type 4-track recording.



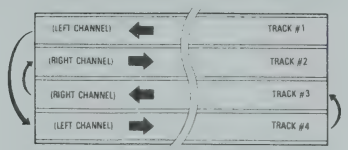


4-track monophonic recording

Each of the four tracks, in this mode, are recorded individually. At the end of each pass through the tape, the reels are interchanged and the next track recorded for a total of four passes through the tape. Track #1, #4, #3 and then #2 are recorded in succession as shown in the illustration. Track #1 and #4 are recorded using the left channel and track #2 and #3 use the right channel.

4-track monophonic recording offers maximum playback time but without the benefit of stereo effect reproduction.

4-TRACK MONOPHONIC RECORDING TRACK SEQUENCE DIAGRAM

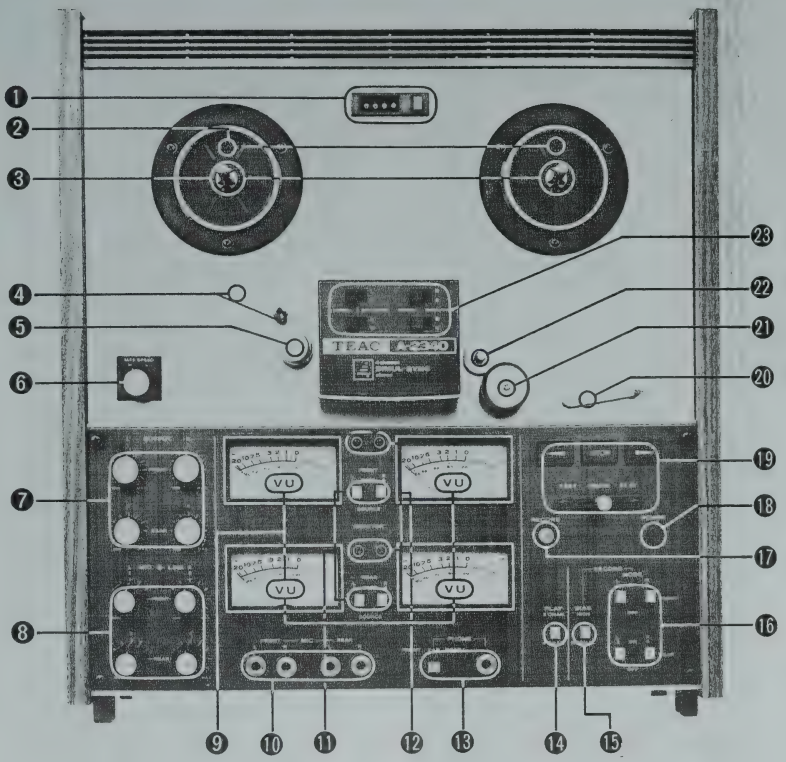


(INDICATES RECORDING OR PLAYBACK TRACK SEQUENCE:

* CURVED ARROWS INDICATE WHEN TAPE REELS SHOULD BE INTERCHANGED TO PROCEED TO NEXT TRACK.

* STRAIGHT ARROWS INDICATE DIRECTION THAT SIGNAL IS RECORDED ON TAPE (OPPOSITE TO ACTUAL TAPE MOVEMENT)

All about the TEAC A-2340



1. **Index COUNTER**
   4-Digit, push button reset. Indicates tape travel.
2. **Reel turntables**
   7-Inch reel holders.
3. **"QUIK-LOK" reel holders**
   To attach reel, grasp metal post in center of reel turntable and turn fully counterclockwise (approximately 2 turns). This will align the reel index tabs. Place reel on turntable and rotate center post clockwise to firmly secure the reel. See page 8.
4. **Tension arm**
   Maintains constant tape tension even during start and stop operation.
5. **Guide post**
   Acts in conjunction with tension arm as a mechanical filter, smooths out any irregularities caused by sticking tape or uneven windings.
6. **Tape SPEED selector**
   Provides high or low speed operation at recording or playback.
   H: 7-1/2 ips
   L: 3-3/4 ips
7. **OUTPUT level controls**
   The 4 independent output controls provide complete flexibility during playback of 4 channel tapes. They also control the output volume at the headphone jacks.
8. **MIC-LINE recording level controls**
   These dual concentric knobs control the recording signal levels from the 8 recording inputs. MIC/LINE mixing can be accomplished by varying the individual input levels.
9. **VU meters**
   Provide individual channel monitoring during record or playback. VU meter placement corresponds to the usual speaker geometry for 4 channel playback.
10. **MIC jacks**
    Front right and left, Rear right and left. Input impedance 600–10,000 ohms.
11. **MONITOR select switches**
    Select either the source signal before it is recorded or the signal from the tape after it is recorded for monitoring at output and PHONE jacks. In addition, they select the signal (tape or source) to be displayed on the VU meters.
12. **Record lights**
    Illuminate to indicate which tracks or channels are in the recording mode.
13. **PHONE selector switch and jack**
    Phone jack accepts any standard 3 conductor headphone plug, headset impedance is 8 ohms. The PHONE selector switch permits monitoring of front channels, rear channels or front and rear channels combined.
14. **PLAY switch**
    Selects either 2-channel (stereo) or 4-channel operation during playback. Switch must be in 4-channel position for 4-channel recording. In 2-channel position lower 2 VU meter lights are extinguished.
15. **RECORD BIAS switch**
    Selects the proper bias level for recording conventional tapes or low noise tapes. It has no effect during playback.
    HIGH: for low noise tapes.
    NORMAL: for conventional tapes.
16. **RECORD MODE switches**
    Allow selection of channel(s) to be recorded.
17. **RECORD button**
    This button in conjunction with the forward play button (▻) and RECORD MODE switches, places the deck in the recording mode.
18. **POWER switch**
    VU meters will illuminate when this switch is depressed. To turn off power, depress again and release.
19. **Tape transport button (control center) & Tape mode lever**
    With the tape mode lever below these buttons at PLAY, depressing the (▻) button will play the tape in the direction indicated. With the tape mode lever at FAST, depressing the (◅ or ▻) button will cause the tape to be wound rapidly in the direction of the arrow. Depressing the STOP button stops the tape in any mode of operation and also disengages the record mode. Placing the tape mode lever at PAUSE temporarily stops the tape in the recording mode without disengaging the recording mode. During playback you may engage the recording mode at any time by

simultaneously pressing the (▻) and the RECORD button. This feature is most useful for editing or for eliminating unwanted material.

20. **Shut-off arm**
    This arm automatically shuts off the tape transport when the tape comes to an end or if the tape breaks during transport. Switch removes power when it comes to rest at horizontal position.
21. **Pinch roller**
    Engage tape to capstan at constant pressure.
22. **Capstan shaft**
    Provides constant speed drive for tape.
23. **Head housing & SIMUL-SYNC track selector**
    Protects the famous TEAC hyperbolic heads, also contains the head function selector switches. These switches make possible the SIMUL-SYNC function. By changing the head function for each track from record to monitor, full 4-track synchronization is possible. Placing the head function selector switch in the SIMUL-SYNC position allows immediate monitoring of the selected track for synchronization with any other track.

Note: To prevent switch noise from damaging your tapes or speakers, always fully retard the OUTPUT level control for the head or channel to be used, before changing the switch position. Do not change switch position while tape is in motion (recording or playback).

PAUSE Control ⑲

The pause control is used while recording to eliminate unwanted program material such as station breaks, commercials, applause, etc. It stops the recording process momentarily desired while keeping the recording amplifiers and the bias oscillator in the "ready" state. The deck may be placed in the record mode with the tape mode lever in the PAUSE position. The RECORD light will glow red to indicate that you are ready to record and recording will begin as you move the tape mode lever from the PAUSE to the PLAY position. To stop recording, move the lever back to the PAUSE position.

Making the Tape Splicing ⇨

Splicing the tape to fill in the gaps between recordings or to add or take out portions of the program. Keep in mind the physical length of the tape for different time sigments at different speeds, i. e., a 5 second segment requires 37-1/2" of tape at 7-1/2 ips.

1. Carefully overlap ends of tape and cut through both layers at about a 45 degree angle.
2. Line up cut edges of the tape so tape extends in a straight path and the outside of both ends is up. Tape across cut
3. Trim edges of spliced area to a slightly smaller width than normal tape to insure that tape adhesive doesn't extend past edges of tape.

BIAS setting ⑮

Record bias in a high frequency (inaudibly high to the human ears, usually, 40kHz–100kHz) signal (in the category of radio frequency) applied to the erase and record heads while the recording of program material is being accomplished. The RECORD BIAS switch provides two preset levels of the recording bias signal. The newer Low Noise tapes require a higher (or deeper) bias signal than do conventional tapes. Therefore when recording on high performance tapes the RECORD BIAS switch should always be placed in the HIGH position.

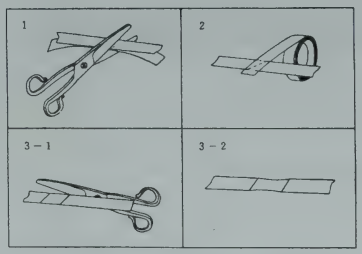
When using conventional tape place the RECORD BIAS switch in the NORMAL position. The switch may be in either position during playback as the bias oscillator is turned off during playback operation.

Recommended switch position is followed to match tape types to be used, however, to compensate a little difference depends on degree of tapes, your experiments may also be necessary some times to a perfect matching.

RECOMMENDED SELECTIONS OF THE BIAS SWITCH POSITIONS FOR IMPROVED TYPES OF TAPE

	SW / 1-mil- tapes	REC BIAS SW position "NORMAL"	"HIGH"
"Low-Noise" type	MAXELL UD-35 FUJI FILM FB-151 FUJI FILM FG-150 SONY SLH-Series TDK SD-150 BASF LP 35-LH SCOTCH 212 MEMOREX 1800		■
	SCOTCH 207 AGFA GEVAERT PE-36		■
Conventional type	FUJI FILM FM 150 SCOTCH 150 or equivalent	■	

■marks show the optimum setting of equalization and bias selected
Empty boxes show unrecommended setting

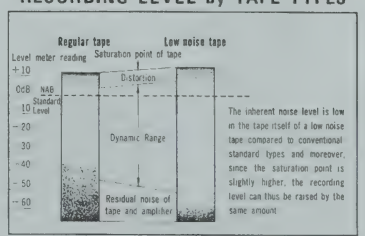


Recording level ⑧

There are two important factors in a good sound tape: broad frequency response and a minimum of noise and distortion. Although the frequency response is actually determined by the tape deck performance characteristics and quality of the tape used, variation of the recording level has a great affect on the end result.

In order to make a recording with minimum noise, it is desirable to record at the highest possible level just before distortion is introduced. Even then it is not always necessary to record at the maximum volume level of the music or to maintain the level meter indication at the dividing line between the red and black zone (0 VU). It must be kept in mind that any tape will suddenly increase in distortion, and recording sensitivity of the high notes will slightly decrease when the recording level exceeds a certain point. For this reason, a standard level of 0 dB is established with an ample margin of safety taken into consideration. In actuality, it is best to become fully acquainted with the performance of the tape and the deck you are using before determining the operating level. Experimentation while using the "monitor" feature will quickly acquaint you with the best recording level for the type tape you are using.

RECORDING LEVEL by TAPE TYPES


Regular tape
Low noise tape
Level meter reading
Saturation point of tape
+10
0dB
NAB Standard Level
10
20
30
40
50
60
Distortion
Dynamic Range
Residual noise of tape and amplifier
The inherent noise level is low in the tape itself of a low noise tape compared to conventional standard types and moreover, since the saturation point is slighlly higher, the recording level can thus be raised by the same amount

Basic Recording & Playback

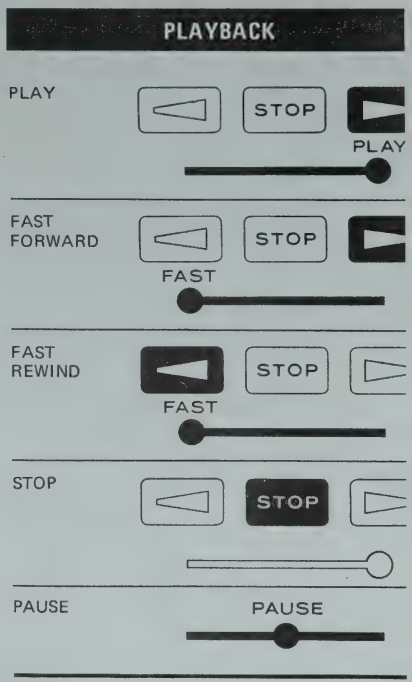
Four channels are recorded simultaneously on all four tracks of the tape. Each track contains discrete but synchronized program material. A four section playback head is utilized, and four amplifiers and four speakers are required. The 4-channel stereo is possible in the forward mode only. Tracks 1 and 3 are called "front" left and right respectively, and tracks 2 and 4 are "rear" left and right. Front and rear correspond to the usual speaker placement in the room relative to the position of the audience. 4-channel stereo provides a concert hall realism and presence not available from conventional 2-channel stereo systems.

Two tracks systems are mainly employed in radio stations and professional recording studios for stereo recording. Two track recording in the home is usually 1-channel moniphonic operation.

A 4-track, 4-channel stereo tape deck is completely versatile in 4-track operation. When playing a 2 track stereo tape on a 4 track recorder, however, while track 1 will be completely covered by the head track 2, and will be slightly out of alignment. By compensating for the slight loss of volume with the volume or balance controls, stereo sound can still be enjoyed. On the other hand, a 4-track tape cannot be played back on a 2-track tape deck unless having 4- and 2-track head selection capability.

PLAYBACK

1. Thread a pre-recorded tape on deck.
2. Set TAPE SPEED knob to match the desired speed of the tape.
3. Slide PLAY switch to 4 CHAN position.
4. Place all 4 MONITOR switches in TAPE position.
5. Move tape mode lever to PLAY position.
6. When playback begins, reset index counter to 0000. Advance the OUTPUT controls until all 4 VU meters are indicating at or near the 0 VU area of the scale.
7. Make final volume, tone and balance adjustments with the controls of the Front and Rear power amplifiers.
8. You may now wish to stop the tape, rewind it to 0000 on the index counter and enjoy playback from the beginning.

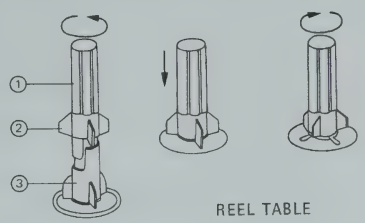


"QUIK-LOK" Reel holders

Always secure these reel holders before operating the deck to assure adequate, solid support for the tape reels. Install the (supplied) adapters to the reel table (see below) before mounting 10-1/2" reels on the reel tables. Follow the procedures below for mounting 7" reels or the adapters onto the deck. Numbers given refer to the illustration.

Procedure:

a. Rotate sections 2 and 1 of the reel shaft fully counterclockwise (↺ CCW).
b. Place the reel onto the reel shaft while slowly rotating the reel CCW to keep both tab sets in line.
c. When the reel is firmly seated on the reel table, turn section 2 then 1 fully clockwise to secure the reel firmly in place.
The tabs on section 2 of the shaft should be centered between the slots on the reel.



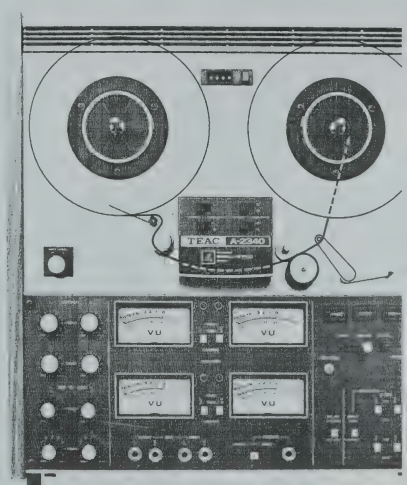
Threading the tape

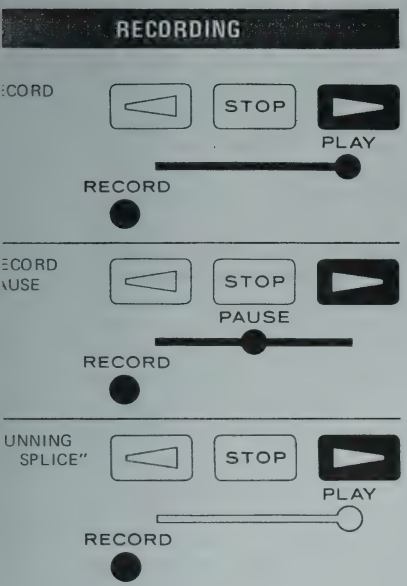
Place the full reel of tape onto the left reel table. Secure the reel holder. Place an empty take-up reel on the right reel table. Secure the reel holder as described above. Note that the tape must leave the full reel on the left side.

Unreel (pull out) carefully approximately 30 inches (75 cm) of tape from the supply reel. Thread this tape in the following manner:

Secure the end of the tape to the take-up reel by holding the end of the tape in the slot while rotating the reel several turns CCW (counterclockwise).

Continue rotating the take-up reel until the tape is no longer loose. Correct tension will raise the shut-off arm from the 3 o'clock position to the 12 o'clock position.





4-track 4-channel stereo recording

1. Thread a blank tape on deck, full reel on left reel turntable.
2. Set TAPE SPEED knob to desired speed, index COUNTER to 0000.
3. Place all 4 SIMUL-SYNC switches in NORMAL position.
4. Set all 4 MONITOR switches in SOURCE position.
5. Position the BIAS switch to match the tape, see table indicated below.
6. Connect the recording source to either the LINE IN or FRONT-MIC-REAR jacks. MIC/LINE mixing may be readily accomplished with the A-2340. With a source of instrumental music fed to the LINE IN jacks and 4 microphones connected to the front panel microphone jacks, the resultant sound mix can be controlled by the individual MIC/LINE input level controls and may be readily monitored with headphones.
7. Place tape mode lever at PAUSE position. Simultaneously press the RECORD and (▻) buttons. Deck is now in record mode, all 4 record indicator lights should illuminate. Recording signal will be displayed on the VU meters.
8. While monitoring the source signal with headphones, adjust the MIC or LINE input level controls so that the signal peaks are at or near the 0 VU point on each meter.
9. Tape motion (and recording) will begin when tape mode lever is swung from PAUSE to PLAY position. Recording may be momentarily interrupted by placing it in the PAUSE position.

To cease recording and disengage the record mode, dimply press the STOP button. The RECORD lights will extinguish and the tape will halt. To resume recording, place the tape mode lever at PAUSE, once again press the RECORD and (▻) buttons.

RECORDING

This A-2340 is capable of monophonic, 2-channel stereo and 4-channel stereo recording. Recordings may be made from a tuner, record player, another tape deck, or from a live source.

When recording from a stereo tuner or record player attach the appropriate output connections on the tuner/receiver to the corresponding LINE IN jack on the A-2340. Place the MONITOR switch to SOURCE and note that the recording level may be adjusted by the controls marked LINE. Note also that the input signal will be desplayed on the VU meters.

When recording with microphones, use the input jacks marked MIC and adjust sound volume with the corresponding controls. If you wish to monitor the material, remember that live speakers in proximity to an open mike will cause feedback; thus headphones are ideal for microphone monitoring.

Tape	Playback channel selector
4-Channel stereo	4 CHAN
4-Track, 2-channel stereo	2 CHAN
Full-track mono	4 CHAN or 2 CHAN
Half-track mono	4 CHAN or 2 CHAN Set the mode selector of the amplifier to "L"

Operation Chart for Recording

Positions of tape deck' selectors / Track system	INPUT								SELECTOR																			
	MIC				LINE				SIMUL-SYNC				REC. MODE				PLAY	MONITOR				HEADPHONE		
	F		R		F		R		F		R		F		R			F		R				
	1	3	2	4	1	3	2	4	1	3	2	4	1	3	2	4		1	3	2	4	F	F+R	R
2-Channel	○	○			○	○			N	N			ON	ON	OFF	OFF	2 CHAN	S/T	S/T			○		
4-Channel	○	○	○	○	○	○	○	○	N	N	N	N	ON	ON	ON	ON	4 CHAN	S/T	S/T	S/T	S/T	○	○	○
SIMUL-SYNC first	○				○				N	N	N	N	ON	OFF	OFF	OFF	4 CHAN	S				○		
second			○						SIM		N		OFF	OFF	ON	OFF	4 CHAN	T		S		○		

SIMUL-SYNC Recording

This is a recording technique wherein discrete, synchronized program material may be recorded independently on all 4 tracks. For instance, rhythm section may be recorded on track 1, brass section on track 3, vocals on track 2 and or 4. The resultant 4 synchronized tracks may be reproduced on a conventional 4 channel playback system with the sound mix readily controlled by the independent level controls. This feature has unlimited applications, an instrumental background may be placed on one track, a volcalist may add the voice selections at a later time, perfectly synchronized through the use of the SIMUL-SYNC feature. The SIMUL-SYNC, in simple terms, allows you to playback and monitor one track without time delay while recording a second, third or fourth track in perfect synchronization, any recorded track may be monitored and the remaining 3 tracks synchronized with it. The head function selector switches provide this feature by changing the function of the record head to playback when the switch is placed in the SIMUL-SYNC position, thereby eliminating the time delay which occurs during normal tape monitoring on conventional machines. This feature permits maximum flexibility in the production of special effects tapes. Each track may be recorded independently and the resultant sound mix played back and re-recorded on a master tape using a second deck. With 8 individual input controls, MIC/LINE mixing can then be accomplished on each track. Individual output controls for each track permit the final recording to be blended with each tracks output at the optimum level. In actuality the A-2340 functions as a complete recording console without the necessity of complex auxiliary equipment.

SIMUL-SYNC RECORDING SEQUENTIAL CHART

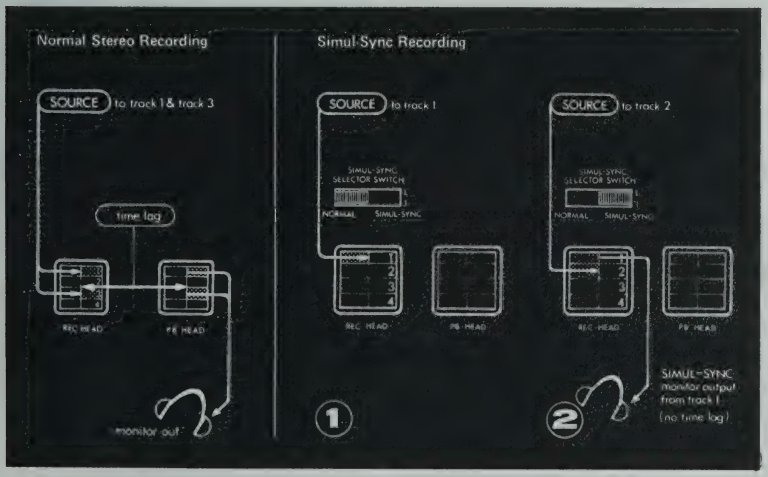
1. MIC . . . . . jack 1 position
2. REC MODE . . . . . L-1 ON
3. SIMUL-SYNC . . . NORMAL selector
4. COUNTER 0000
5. MONITOR . . . . . SOURCE

Note: use only the R-3 RECORD MODE switch (ON position). Remember to move the L-1 RECORD MODE switch to the OFF position before recording track #3.

6. REWIND to 0000 at the end of recording
7. SIMUL-SYNC selector . . . SIMUL-SYNC position with OUTPUT control minimum
8. REC MODE #1 . . . OFF
   #2 . . . ON
9. MONITOR #1 . . . TAPE position
10. Microphone . . . . . MIC jack #2
11. OUTPUT Vol . . . max. control

Note: Although the frequency response and output levels differ from NORMAL playback mode for tentative using a REC head as reproducing function, however, it will actually be sufficient for monitoring purposes.

12. Start tape motion in REC MODE
13. Align and record onto the track #2 with track #1 contents (synchronized recording or real time recording)



Since all 4 MONITOR switches remain in the SOURCE position, all 4 tracks should be recorded at the optimum reference level. That is with the VU meter indications centered at or around the 0 VU point on the scale. You now have discrete, synchronized program material on all four tracks, obviously therefore, they may be played back simultaneously. The sound mix or blending is accomplished during the playback mode.

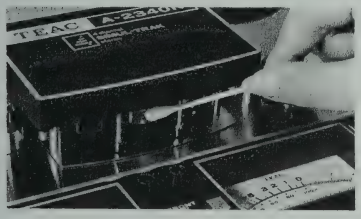
Any or all of the independent tracks may be erased and re-recorded as they can be easily synchronized to any remaining track by use of the appropriate head function selector switch. During playback, all head function selector switches should be in the NORMAL position.

Cleaning

(Maintaining original performance)

Dirty heads will cause a reduction in high frequency response, irregular head wear, dropouts and, in extreme cases may cause the deck to be unable to record. The single most important point in tape deck maintenance is frequent and proper cleaning of the heads and tape path such as tape guides, tape lifters, tension arm guide, capstan shaft and pinch (pressure) roller. The heads should always be cleaned before making important recordings, and at least once for every eight hours of use. Commonly used cleaning fluids are chlorothane, ethl alcohol, or fluid A in TEAC's Head Cleaner Kit (optional, TZ-261). Cleaning stick applicators are also provided in your Accessory kit. For all rubber surfaces use only fluid "B" from the kit as it is especially formulated for cleaning rubber surfaces. Do not use chlorothane, in this case, as it will cause deterioration of the rubber roller.

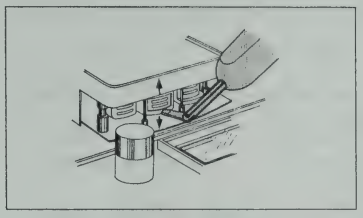
The newer tape formulations leave a gray or white residue which is difficult to detect. Regular cleaning schedules should be established rather than relying only on visual determination. For front panel and case face cleaning, a polisher kit is also available from TEAC (optional TZ-270).



Head demagnetization

During long periods of use, the heads may become slightly magnetized. As a result, high frequency response will decrease, noise will develop, or in extreme cases, the high frequencies will drop, or noise will be introduced into your valued pre-recorded tapes. To keep your deck operating with its original fidelity the heads should thus be degaussed at least once for every 50 hours of use, with i. e., TEAC model E-1 Head Demagnetizer. Places specified for degaussing include each head, capstan shaft and guide posts. Before proceeding with the following steps move all the pre-recorded tapes sufficiently away from the degaussing area.

1. Turn OFF power to the deck.
2. Slide the switch of E-1 ON, bring the tip close to the head and slowly move it up and down four or five times.
3. Slowly draw it away from the head.
4. After finishing all points, turn OFF power to the demagnetizer only after it has been drawn at least 12 inches (30 cm) away from the heads.



E-2 BULK ERASER

Tape Storage and Headling

Magnetic tape recordings are superior to phonograph discs because, with proper care, they can be kept and replayed for many, many years without degradation. During playback, the biggest danger to the recording is a magnetized or dirty point on the deck, such as a head or capstan. Care for the recording and the tape must be continued even after playing it by following these guides:

Protect the tape from dust, keep it in the plastic bag and the original carton.

Protect the tape from temperature extremes; avoid freezing temperatures, direct sunlight and heat radiators.

Protect the tape from stress; tremendous pressure is built-up on the inner windings of tape. This pressure is acceptable unless you apply additional stress by bending or squeezing the sides of the reels. This problem is increased if the windings are irregular. Quite frequent starts and stops will cause uneven winding pressure and the tape will be unevenly wound from side to side within the reel. Slight pressure on the sides will then break or crack the edge of the tape. Therefore, always prepare your tapes for long-term storage by re-winding them using the playback operating speeds. The fast forward or rewind modes apply somewhat more tension on the tape.

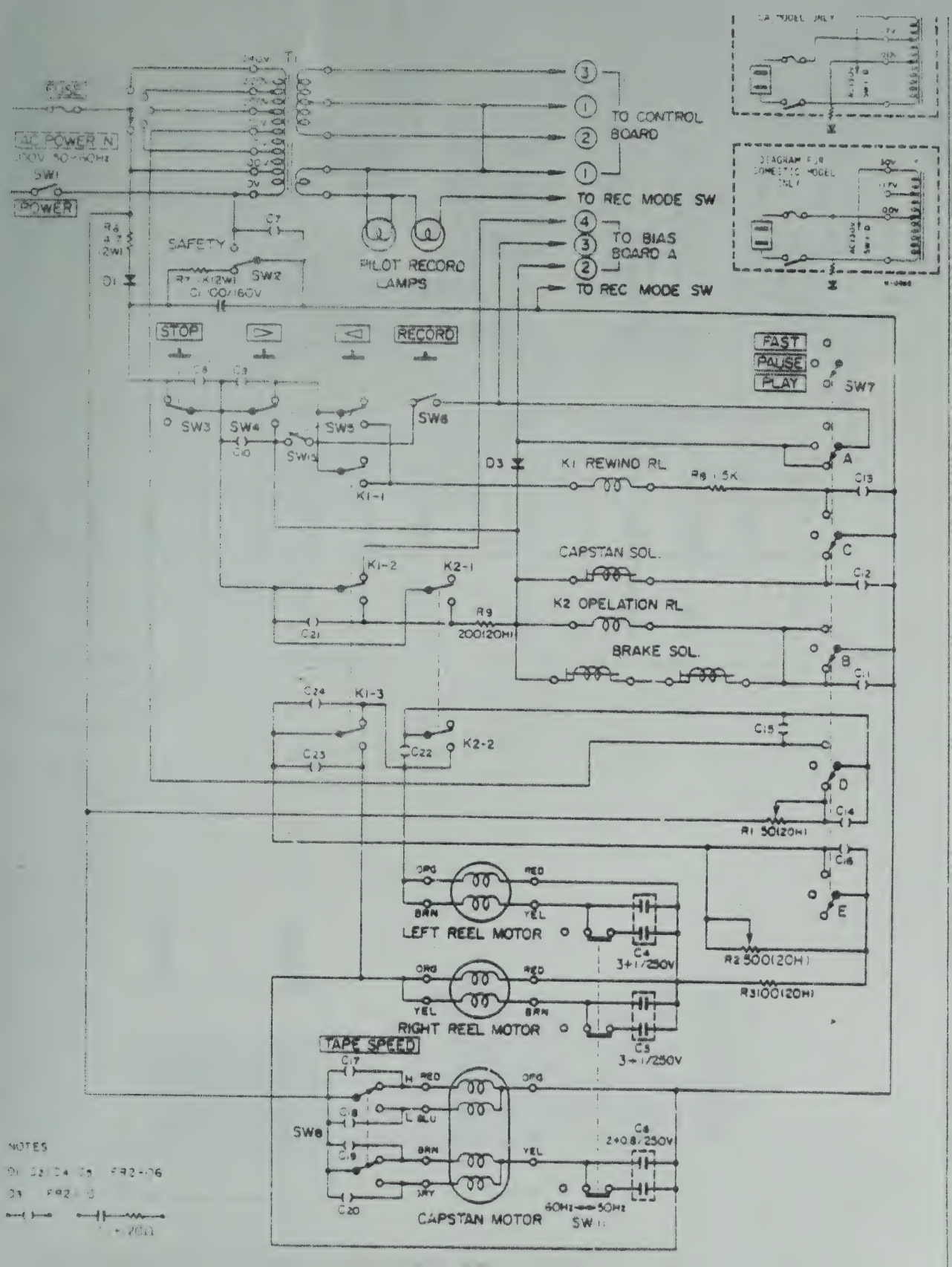
Protect the tape from strong magnetic fields; just as a bulk eraser will degauss recorded material, so might a strong magnet, electric motor, coil or transformer affect the recording.

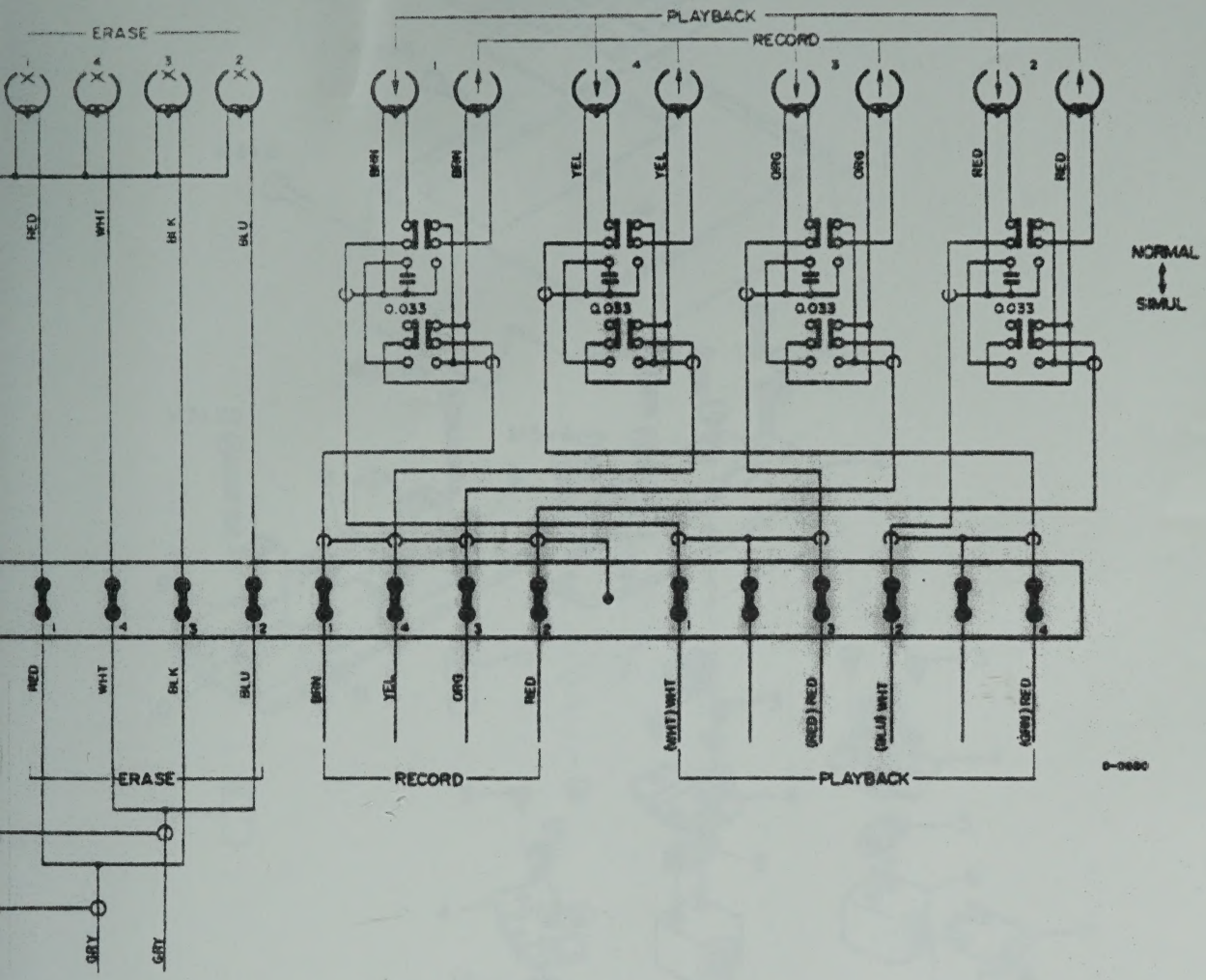
ERASING

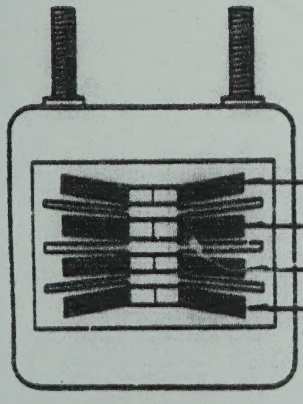
The erase head of a given track is always energized during the record mode, in order to assure clean recordings; whatever noise or sound may have previously existed on that track is erased immediately before the new program material is recorded.

To erase a tape without recording new material, simply turn MIC and LINE controls to the minimum position, and operate the equipment for recording. (Remember that erasing, like recording, can be accomplished in the forward mode only.)

In the event that the entire tape is to be erased, a bulk eraser is the most efficient means. (TEAC E-2 optional)

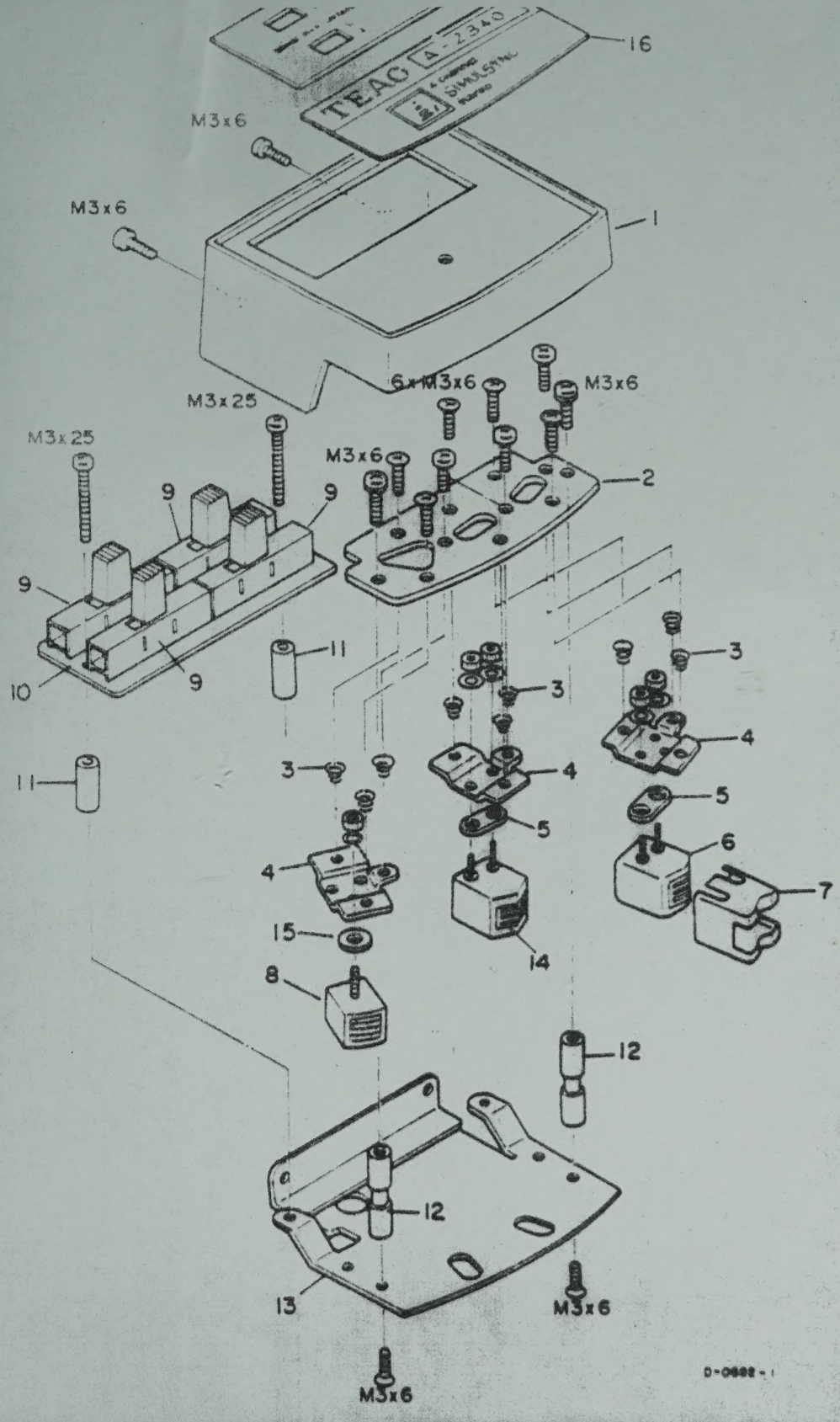
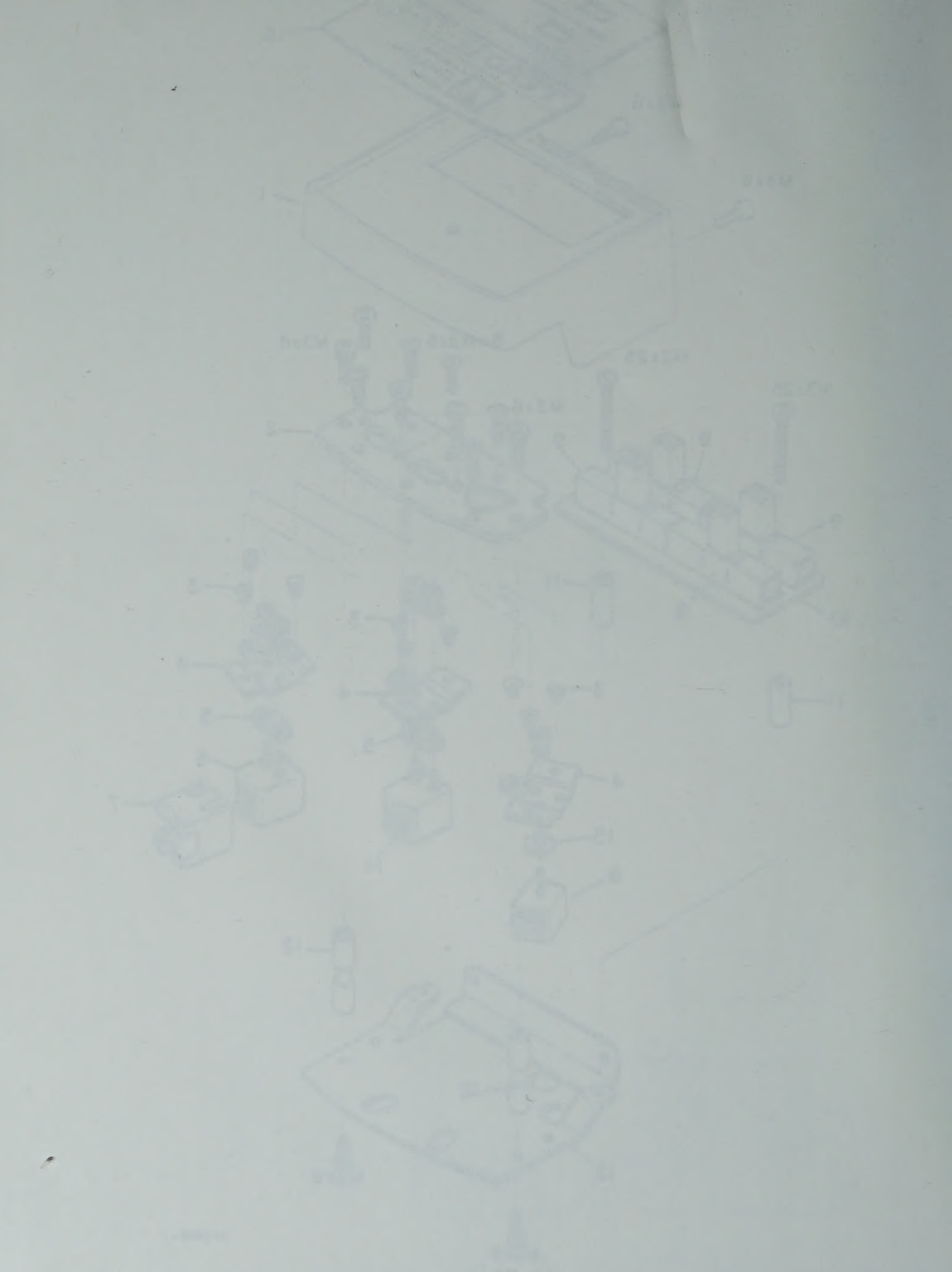

FUSE
AC POWER IN
SW1
POWER
T1
TO CONTROL BOARD
TO REC MODE SW
TO BIAS BOARD A
TO REC MODE SW
SAFETY
PILOT RECORD LAMPS
STOP
RECORD
FAST
PAUSE
PLAY
SW7
SW3
SW4
SW5
SW6
K1 REWIND RL
CAPSTAN SOL.
K2 OPELATION RL
BRAKE SOL.
K1-1
K1-2
K2-1
K1-3
K2-2
LEFT REEL MOTOR
RIGHT REEL MOTOR
CAPSTAN MOTOR
TAPE SPEED
60Hz 50Hz
SW11





CHANNEL	L·R	COLOR CODE	
CH1	FRONT L	RED	ORG
CH2	REAR L	GRN	BRN
CH3	FRONT R	BLU	WHT
CH4	REAR R	YEL	BLK

D-3738


TEAC A-2340
16
M3x6
M3x6
1
M3x25
6xM3x6
M3x6
M3x25
M3x6
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9
9
9
9
10
11
3
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11
3
4
4
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12
12
13
M3x6
M3x6
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